

WHAT IS CLAIMED IS:

1. A lamp inverter circuit comprising:
 - a switching portion that converts a bus voltage signal into an alternating current signal;
 - an input portion that receives the bus voltage signal;
 - a resonant load portion for driving a lamp; and,
 - a preheating portion that:
 - heats the lamp prior to ignition of the lamp; and,
 - renders itself inactive after ignition of the lamp.
2. The lamp inverter circuit as set forth in claim 1, wherein the cathode preheating portion includes an unidirectional switch used to control energy delivered to the at least one lamp.
3. The lamp inverter circuit as set forth in claim 2, wherein the inverter circuit is one of a voltage fed or current fed circuit.
4. The lamp inverter circuit as set forth in claim 2, wherein the unidirectional switch is a field effect transistor.
5. The lamp inverter circuit as set forth in claim 2, wherein the unidirectional switch is a bipolar junction transistor.
6. The lamp inverter circuit as set forth in claim 2, wherein the unidirectional switch detects if one of the lamp and the bus voltage signal has failed.
7. The lamp inverter circuit as set forth in claim 6, wherein the unidirectional switch ignites an auxiliary light source upon detection of failure of one of the bus voltage and the lamp.

8. The lamp inverter circuit as set forth in claim 6, further including a current limiting device to limit a maximum current, upon failure of the lamp.

9. The lamp inverter circuit as set forth in claim 2, wherein the unidirectional switch has a zero voltage turn-on point.

10. The lamp inverter circuit as set forth in claim 2, wherein the unidirectional switch has a zero current turn-off point.

11. The lamp inverter circuit as set forth in claim 2, wherein the preheating portion further includes a second switch, the second switch controlling a turning off of the preheating portion.

12. A method of starting a lamp comprising:
receiving a bus voltage signal;
converting the bus voltage signal into an alternating current signal;
preheating the lamp to an ignition temperature;
igniting the lamp; and
inactivating the preheating after the lamp has been ignited.

13. The method as set forth in claim 12, further including: detecting a conductive state of the lamp.

14. The method as set forth in claim 12, further including an independent inverter circuit used for the cathodes heating or an auxiliary lamp.

15. The method as set forth in claim 13, wherein the step of detecting includes detecting the conductive state of the lamp with a unidirectional switch, the unidirectional switch having a zero voltage turn-on point and a zero current turn-off point.

16. The method as set forth in claim 12, further including:

detecting if the lamp has failed.

17. The method as set forth in claim 16, further including: igniting an auxiliary lamp upon detection of failure of one of the lamp and/or all of the lamp load.

18. A method of igniting an auxiliary lamp comprising:
detecting a conductive state of a main lamp in a lamp ballast circuit with a switch that also controls preheating the main lamp;
detecting the integrity of the main lamp; and
switching current flow from the main lamp to the auxiliary lamp in the event of a main lamp failure.

19. The method as set forth in claim 18, further including:
supplying auxiliary power to the auxiliary lamp in the event of lamp failure.

20. The method as set forth in claim 18, wherein the switch has a zero voltage turn-on point and a zero current turn-off point.